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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,393	03/18/2004	Seiji Toyoda	041309/275931	5512

826 7590 07/23/2004

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EXAMINER
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LEE, SIN J

ART UNIT	PAPER NUMBER
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1752

DATE MAILED: 07/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/803,393	<b>Applicant(s)</b> TOYODA ET AL.	
	<b>Examiner</b> Sin J. Lee	<b>Art Unit</b> 1752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 15-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 09/409,078.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>03182004</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

1. In the preliminary amendment filed on March 18, 2004, applicants canceled claims 1-14.
2. Based on the reading of the first full paragraph on pg.6 of present specification, the phrase "wet etching said photosensitive composition thin film" as used in present claims 17 and 20 is interpreted by the Examiner to mean *washing out the unirradiated (or uncrosslinked) part of the photosensitive composition thin film by a solvent.*

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 16 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 16, the preamble recites, "[a] method of producing said photosensitive composition for optical waveguides *as claimed in Claim 15*". Yet, the method of claim 16 comprises the step of heating a *silicone oligomer*. Since the oligomer claimed in present claim 15 is not a silicon oligomer, the scope of present claim 16 is indefinite. For the same logic, the scope of present claim 19 is also indefinite.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

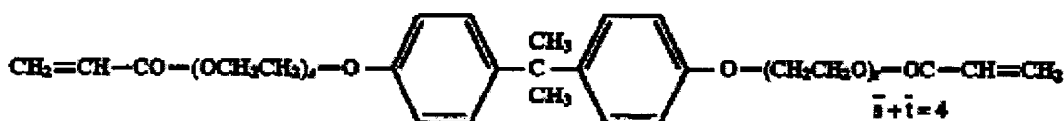
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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 15 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsuji et al (5,800,965).

In Examples 1-3 (see col.12, lines 37-67, col.13, lines 1-25, Table 1, col.19, lines 10-20), Tsuji teaches a photopolymerizable composition containing (i) Compound-4 which has the following structure:



and (ii) a photopolymerization initiator system. Tsuji's Compound-4 teaches present oligomer of the formula (5): present  $R_1$  and  $R_2$  would be H atoms,  $X_2$  would be an alkylene group,  $X_1$  and  $X_3$  would be oxyalkylene groups, and Y would be  $-\text{O}-\text{OC}-\text{CH}=\text{CH}_2$ , which is a polymerization activating group. Therefore, Tsuji teaches present photosensitive composition of claim 15 (it is the Examiner's position that Tsuji's composition would inherently be capable of being used for optical waveguides).

Tsuji coats his photopolymerization composition onto a support and dries it to form a dried film. Then, the film is exposed and then immersed in a developer to obtain a cured image. See col.12, lines 40-49, col.13, lines 25-35. Therefore, Tsuji teaches

present method of claim 17 (it is the Examiner's position that Tsuji's method would inherently be capable of being used for forming a polymer optical waveguide pattern).

7. Claims 15 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Schon et al (6,162,881).

In Example 5 (see col.9, Table 3), Schon teaches a reaction resin mixture containing bisphenol-A-diglycidyl ether and a cationic polymerization initiator. The bisphenol-A-diglycidyl ether teaches present oligomer of the formula (5): present  $R_1$  and  $R_2$  would be H atoms,  $X_2$  would be  $-C(CH_3)_2-$  (an alkylene group),  $X_1$  and  $X_3$  would be  $-OCH_2-$  (oxyalkylene group), and Y would be epoxy group, which is a polymerization activating group. Therefore, Schon teaches present photosensitive composition of claim 15 (it is the Examiner's position that Schon's composition would inherently be capable of being used for optical waveguides).

Schon teaches (col.5, lines 25-30) that his reaction resin mixture can produce patterns by irradiating the layer made of his reaction resin mixture using a mask and then dissolving out the non-irradiated areas using a suitable solvent. Therefore, the prior art teaches present method of claim 17 (it is the Examiner's position that Schon's method would inherently be capable of being used for forming a polymer optical waveguide pattern).

8. Claims 18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Kita et al (JP 01214839 and its English abstract (Chem. Abstract 1990:88366)).

Full English translation for the Japanese document has been submitted. Only the English abstract is available at this time. Kita teaches (see the abstract) a

photosensitive layer which contains a composition comprising monomer or oligomer having more than one photopolymerizable ethylenic group and a photopolymerization initiator, and the compound which chemical structure is shown in the abstract teaches present oligomer of formula (6): present  $R_1$  and  $R_2$  would be H atoms,  $X_2$  would be an alkylene group,  $X_1$  and  $X_3$  would be oxyalkylene group including an -OH group, and Y would be  $H_2C=CH-CO-O-$ , which is a polymerization activating group. Therefore, Kita teaches present photosensitive composition of claim 15 (it is the Examiner's position that Kita's composition would inherently be capable of being used for optical waveguides).

Kita (see the abstract) imagewise exposes his photosensitive layer and develops the exposed layer using a developer. Therefore, Kita teaches present method of claim 17 (it is the Examiner's position that Kita's method would inherently be capable of being used for forming a polymer optical waveguide pattern).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is 571-272-1333. The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

*S. J. Lee*

S. Lee

July 22, 2004

*Sin J. Lee*  
Sin J. Lee  
Patent Examiner  
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1700